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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/552,432

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Bianxiao Zhong

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8954

23720 7590 10/24/2007
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EXAMINER

MOORE, MARGARET G

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

10/24/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/552,432

Applicant(s)

ZHONG ET AL.

Examiner

Margaret G. Moore

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 to 19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 to 19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3 to 16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto et al.

This rejection relies on the rationale of record, thus the teachings of Sakamoto et al. and how they apply to the claims, will not be repeated. Applicants' traversal is not persuasive.

Initially the Examiner notes that most of applicants' traversal involves the specific examples while it is the entire teachings in Sakamoto et al. that are relied upon in this obviousness rejection.

First it is argued that there is no evidence that the example prepares the siloxane resin, or cocondensate. The Examiner disagrees. The bottom of column 6 teaches that the acid acts as a catalyst for the hydrolysis of silane. As is known, and would have been immediately envisioned by the skilled artisan, upon hydrolysis in the presence of an acid catalyst, a silane will undergo condensation to form a siloxane resin¹. While column 7 teaches that heating reduces reaction time, this is not necessary for hydrolysis. The Examiner maintains the position that the first step in Example 1 prepares a siloxane resin such as that claimed.

Second, it is argued that a condensation between a phenolic novolak resin and an alkoxysilane would result in an Si-O-Ph linkage which is outside the scope of the claims. The Examiner is well aware of this. This was specifically noted on the sixth and fifth to the last lines on page 2 of the previous office action.

¹ While the Examiner does not believe it is necessary to support this position, as this is within the level of knowledge of the skilled artisan, she refers applicants to pages 3 and 4 of Kirk-Othmer Encyclopedia of Chemical Technology, "Silicon Compounds, Silicon Esters", 2001. This shows that in the presence of an acid or base, Si-OR groups undergo condensation upon hydrolysis.

It is then argued that Sakamoto et al. provide no guidance to replace the phenolic novolak resin with a compound yielding a $O-(CH_2)_m-Z_n$ moiety. The Examiner strongly disagrees. While phenolic resins are preferred, Sakamoto et al. are not limited to their preferred embodiments. While applicants refer to a "laundry list", they are reminded that patentees specifically teach compounds that will result in the necessary linkage. In this aspect patentees anticipate the selection of, for instance, a 9-hydroxymethylantracene reactant.

With regard to the "incorporation" teaching in Sakamoto et al., patentees teach that the component (B) is capable of being condensed to component (A). Applicants state that Sakamoto et al. do not teach any reaction conditions, but the totality of the teachings in Sakamoto et al. indicate that such condensation will inherently occur within the reaction conditions disclosed. On the other hand, there is nothing to indicate that adjusting the reaction conditions in an effort to optimize the condensation of the component (B) with component (A) in Sakamoto et al. would be outside the level of skill for the ordinary artisan.

For these reasons applicants' traversal is not persuasive and the Examiner maintains this rejection.

3. Claims 1, 3 to 16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kennedy et al.

This rejection relies on the rationale of record, thus the teachings of Sakamoto et al. and how they apply to the claims, will not be repeated. Applicants' traversal is not persuasive.

Applicants note that Example 12 uses MTEOS and TEOS rather than HTEOS and TEOS. As notes in the previous office action, though, Kennedy et al. specifically teach a hydrogen siloxane polymer having both "a" and "b" units as claimed. See column 4, lines 10 and 11. Again, since patentees do not refer to this formulas as a silsesquioxane, this indicates that at least some "b" units are present.

With regard to applicants' assertion that HTEOS and MTEOS are not equivalent, and reference to the comparative examples, the Examiner acknowledges that there is a

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difference in results but questions if the difference is, in fact, unexpected. To this extent applicants' attention is directed to column 6, lines 1 to 10, of Boyers et al. This indicates that etch rate is directly related to the mass to be removed. It would then follow that the skilled artisan would expect SiH material to have a faster etch rate than SiCH₃ material. Applicants have not established any unexpected results associated with the claimed siloxane resin.

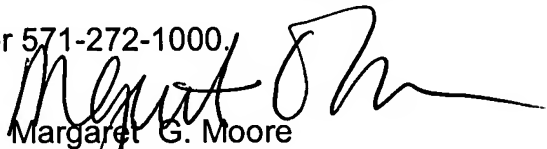
4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Margaret G. Moore whose telephone number is 571-272-1090. The examiner can normally be reached on Monday and Wednesday to Friday, 10am to 4pm.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Margaret G. Moore
Primary Examiner
Art Unit 1796

mgm
10/19/07